August 7 2006

MEMORANDUM – Internal Review Draft

TO: Thomas Rackow, P.E., Staff Engineer, DEQ-IFRO

FROM: Kathryn Dallas, Hydrogeologist, DEQ-State Office

SUBJECT: Staff Analysis of the Department of Energy (DOE), Naval Reactors Facility (NRF) Reuse Draft Permit LA-000155-01 (Industrial Wastewater).

1.0 Purpose

The purpose of this memorandum is to satisfy the requirements of IDAPA 58.01.17.400.04 (Reuse Rules) for issuing land application permits. It states the principal facts and significant questions considered in preparing the draft permit conditions or intent to deny, and a summary of the basis for approval or denial with references to applicable requirements and supporting materials.

2.0 Process Description

The Idaho National Laboratory (INL) is located on approximately 890 square miles of high desert terrain in southeastern Idaho. The Lost River, Lemhi, and Beaverhead mountain ranges border it on the north and northwest. The eastern border of the INL is approximately 25 miles west of Idaho Falls, Idaho.

The Naval Reactors Facility (NRF) is a federal (USDOE) facility located on the west-central part of the INL. Established in 1949, NRF is operated for the U.S. Naval Nuclear Propulsion Program by Bechtel Bettis Inc., Bettis Atomic Power Laboratory-Idaho. NRF is in Butte County, with a legal description of Township 4N, Range 30E, Section 30. The developed portion of the site, within the security fence, covers approximately 84 of the 4400 acres under the management of NRF.

Three former naval reactor prototypes (S1W, A1W, and S5G) and the Expended Core Facility (ECF) are located within the NRF security fence. The S1W, A1W, and S5G prototypes were shut down in October 1989, January 1994, and May 1995, respectively (Bechtel Bettis, 2005).

Developmental nuclear fuel material samples, naval spent fuel, and irradiated reactor plant components/materials are examined at ECF. The knowledge gained from these examinations is used to improve current designs and to monitor the performance of existing reactors. NRF is also preparing spent nuclear fuel for dry storage in accordance with the Idaho Settlement Agreement (Bechtel Bettis, 2005).

Wastewater generated by various plant operation processes is discharged to the Industrial Waste Ditch (IWD). IWD has been used since 1953 for non-radioactive, non-sewage, industrial wastewater disposal.

(Intentionally left blank)

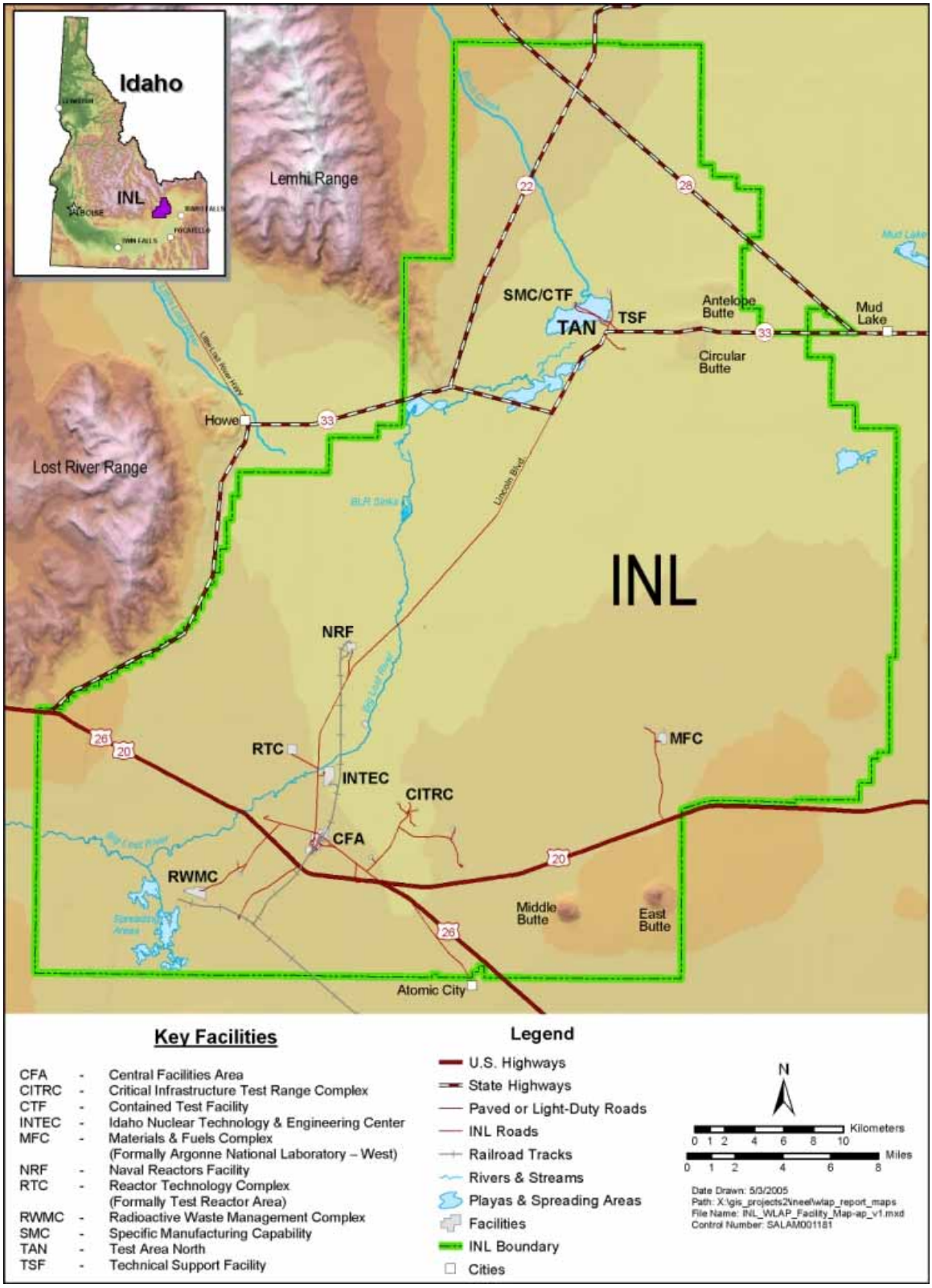

Figure 1. *Idaho National Laboratory.*

2.1 Industrial Waste Ditch (IWD)

The IWD consists of two discrete drainage systems. The interior IWD is composed of a network of buried pipes, culverts and open channels within the NRF security fence. This network empties into a covered exterior culvert; the wastewater flows through an effluent control and environmental monitoring station (ECMS), where it outfalls through a sluice gate valve system, to an uncovered exterior channel at the northwest corner of NRF. The station monitors effluent flow with a Teledyne Isco 4230 Bubbler Flow Meter on a continuous basis and collects samples semi-monthly from an automated sampler that draws small daily aliquots of effluent from the process stream and stores them in a refrigerated unit until time for analysis (Bechtel Bettis, 2005).

The exterior portion of the IWD consists of an unlined, open channel extending northeasterly from the northwest corner of the fenced perimeter of NRF for approximately 3.2 miles, along two abandoned meander channels that have been artificially joined, where it is terminated by the berm of an abandoned irrigation ditch built in the late 1800's.

Wastewater discharges entering the IWD are comprised of non-hazardous, industrial wastewater, rain and snow-melt runoff, deep well waste effluent from sampling, lawn watering, and water from water main and fire hydrant flushing activities. Industrial wastewater is generated from the site's reverse osmosis system, boilerhouse blowdown effluent, steam condensate, and ECF air compressors. Historically, discharges to the IWD have included non-contact cooling water containing dilute acid and heavy metal compounds, industrial waste water containing traces of oil, acidic and corrosion-inhibiting heavy metal compounds, acidic and basic ion exchange regeneration solutions from the water treatment facility, laboratory reagents, and rain and snow runoff. No hazardous constituents have been discharged since 1980 (DOE, 1994).

In 1993, approximately 170 million gallons of effluent was discharged to the IWD. At this time, the channel is wetted with wastewater for the first 1.2 to 1.6 miles. Much of the wastewater discharging to the IWD has been eliminated due to the deactivation of the three reactor prototypes, the last of which occurred in 1995. In 2004, 8.8 million gallons of wastewater was discharged to the IWD. According to the application, wastewater discharging to IWD is lost through a combination of percolation, evaporation and to a lesser degree, evapotranspiration by plant life along the edges of the IWD.

NRF currently monitors the air, soils, wastewater effluent and regional ground water for radiological and non-radiological constituents under their environmental monitoring program. This monitoring is conducted to ensure compliance with applicable federal and state standards, such as IDAPA58.01.01, IDAPA 58.01.08, IDAPA 58.01.11, IDAPA 58.01.16, IDAPA 58.01.17, CFR 40.61.H, CFR 40.50, CFR10.20.1301, and CFR10.141.66 (NRFEA-1246, 2003). The results from NRF's extensive monitoring program are reported on an annual basis to DOE and DEQ. Staff used monitoring schedules and data found in the Bechtel Bettis 2002 and 2003 *Environmental Monitoring Reports* to prepare this permit (Bechtel Bettis, 2002 and 2003). Staff has reviewed this

monitoring program and concludes that data collected for the purpose of annual environmental monitoring program can be supplemented for requirements under this Reuse permit. Additional requirements are outlined in this analysis and stated in the permit.

3.0 Summary of Events

The exterior IWD was evaluated in a Remedial Investigation (RI) under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) in 1994. The RI was performed because of known discharges of low concentrations of organic and inorganic substances from 1953 through the early 1990's. The RI for the IWD included a review of existing data, characterization of the area around the ditch through extensive sampling of surface water, ditch (and dredge pile) sediments, soils and perched water (Nygard, 2004). A risk assessment was completed and it was determined that there were no unacceptable risks to human or ecological receptors (WEC, 1994). A Feasibility Study (FS) was not completed for the IWD. A Comprehensive Remedial Investigation/ Feasibility Study (RI/FS) was conducted for the entire facility in 1994 by Westinghouse Electric Corporation (WEC) (WEC, 1994). The Record of Decision was signed by the Environmental Protection Agency (EPA), State of Idaho, and DOE, Naval Reactors Idaho Branch Office on September 30, 1998 (Bechtel Bettis, 2002). No action was recommended for the IWD. This 1994 RI only covered IWD from a soils perspective with understanding that all ground water at NRF would be evaluated under the comprehensive evaluation. The 1996 comprehensive evaluation recognized the need for more wells, including a semi-circle of wells south of facility and NRF-13. Data for the comprehensive RI didn't show exceedences of Maximum Contaminant Levels (MCL's) in NRF-6 and NRF-13 at that time. The MCL's were discovered in post-ROD data, after comprehensive RI was finished. The current data shows an increasing chromium trend in NRF-6 and NRF-13. NRF believes it's from either the interbedded sediments or well equipment. It is unclear if they evaluated fate and transport of IWD effluent.

A Reuse Permit application was first submitted to DEQ by NRF on November 18, 1994. On January 25, 1996, DEQ requested the submittal of additional information in order to consider the Reuse application complete. NRF submitted the requested information to DEQ on February 26, 1996. DEQ issued a draft Reuse permit (No. LA-000155-001) to NRF in a letter dated June 13, 1996. On July 15, 1996, NRF submitted a letter to DEQ with comments on the draft permit. A final Reuse permit for the IWD was not issued.

On March 18, 2004, DEQ visited NRF to discuss the need to reapply for a Reuse permit. Naval Reactors, Idaho Branch Office and NRF personal met with DEQ on December 8, 2004 for a pre-application conference in fulfillment of IDAPA 58.01.17.300.03. This meeting discussed the details of what needed to be included in the NRF Reuse application.

On April 6, 2005 DEQ staff met with NRF personal for a site visit. During this visit NRF personal were given the opportunity to discuss other concerns associated with the submittal of the Reuse application.

NRF submitted the current Reuse permit application (Bechtel Bettis, 2005), hereafter the application, to the DEQ. The application was received on April 20, 2005.

4.0 Discussion

The analysis below discusses relevant issues concerning site conditions, data, and historical and proposed management for purposes of determining permit conditions.

4.1. Site Characterization

4.1.1 Soils

Several borings taken near the IWD between 1987 and 1991, as part of CERCLA investigations, allowed for the characterization of the subsurface around the IWD. From these borings, an idealized stratigraphic section of the IWD shows that a layer of loess extends from the surface down to a depth ranging from 6 inches to 9 feet.

Annual soil sampling of sediments at the outfall is currently done under NRF's environmental monitoring program. Those results are analyzed and included within the annual *Environmental Monitoring Report,* which is submitted to the Department of Energy (DOE) and DEQ. Staff recommends that NRF continues to sample the IWD sediments and that the results from this annual sediment sampling be included in the annual report required under the Reuse permit.

According to the application, plant growth and sedimentation have caused the flow in the IWD to periodically back up. NRF personnel indicated that dredging of the channel is necessary and done occasionally to maintain a positive flow away from the facility. The dredged material is piled along the sides of the ditch and seeded for erosion control. Dredging of the IWD is done on an as needed basis, to be determined by NRF personal in charge of overseeing the operations. More detail on the removal the solid waste will be provided to DEQ in the form of a Solid Waste Management Plan (Refer to Section 4.2.2 Compliance Activities of this document for more detail).

4.1.2 Geology

The loess generally overlies an alluvium sequence which ranges in thickness from 3 to 30 feet. The alluvium consists of poorly sorted gravels and sands. Gravel clasts are of igneous, metamorphic, and sedimentary composition. Clasts range in size from ¾ inches to 2 inches in diameter and are sub-rounded to angular. Sands make up the matrix for the gravels encountered, and also occur as discontinuous layers and lenses within the alluvium.

The alluvium directly overlies either a fluvial/lacustrine (F/L) deposit or basalt. The F/L deposit is characterized by light brown silty clay interbedded with fine sands and occasional gravels. These layers occur as repetitive fining upward sequences that range in thickness from 4 inches to 1 foot. According to the application, downward movement of ground water may be inhibited to some degree by the clay content associated with this sequence.

The bedrock unit underlying the IWD is characterized as a gray to reddish-gray vesicular basalt. The upper surface of this unit is irregular and varies in elevation over very short horizontal distances. The irregular surface is a result of impendence to flow at the time of eruption and erosion after the flow event had occurred.

4.1.3 Ground water

Perched water has been detected in areas surrounding the IWD at two depths. Borings drilled during the RI/FS under CERCLA encountered the upper saturated interval at approximately 23 feet below ground surface. This saturated interval was estimated to be less than six inches thick. The water is presumed to be perched on the first clay layer of the F/L facies. The lateral extent of the perched water table is not well defined. The perched water was found to exist primarily in close proximity to the IWD; however, some ditch borings drilled within 50 feet of the IWD did not encounter ground water, while some borings 350 feet away, characterized with alluvium, did encounter water.

The borings identified a second perched water layer in a bed of red lithic sandstone between 85 and 100 feet below ground surface. The amount of water encountered at this depth was too small for obtaining a sample.

Infiltration losses from the IWD are the likely primary source of recharge to the perched water table. A highly variable surface of the F/L facies, due to the uneven surface of the underlying basalt, makes it difficult to define ground water flow direction of this perched system.

The application states that a water infiltration study of the IWD was conducted as part of the 1994 Final RI/FS for the exterior IWD. The study found that from June 5, 1993 to September 1, 1993, approximately 1.32 million cubic feet of water infiltrated into the subsurface beneath the IWD, over a distance of 1,363 feet from the outfall. This yields a percolation rate of 248 feet/year based on an average width of 16 feet through this segment of the IWD.

The regional ground water beneath the NRF is part of the Eastern Snake River Plain Aquifer System. This aquifer system is approximately 200 miles long and 40 to 60 miles wide and is approximately 9600 square miles in area. Regional and local ground water flow is generally south-southwest with an average gradient of 3.5 feet per mile in the vicinity of NRF. Depth to regional ground water in NRF production wells varies from 360 to 385 feet below ground surface. Ground water velocity near NRF is approximately 15 feet per day (WEC, 1994).

NRF has conducted a comprehensive ground water monitoring program since 1989 to verify that NRF operations are not adversely affecting the quality of regional ground water (see further discussion below); however it is unknown if ground water contamination of all constituents of concern (primary and secondary) has increased or decreased after the significant reductions in effluent loading to the IWD occurred (when NRF shut down 3 prototype reactors prior to 1995). Appendix 2 of the Reuse permit includes a site plan with the location of the ground water monitoring wells, which include up-gradient, cross-gradient, and down-gradient wells. NRF proposed the following wells to verify ground water compliance with Reuse rules: USGS-12, NRF-6, USGS-102, NRF-8, NRF-9, NRF-10, NRF-11, and NRF-12. The following wells are used for ground water monitoring under NRF's *Environmental Monitoring Program*, but were not proposed for monitoring under the Reuse permit: USGS-15, NRF-7, NRF-13, USGS-97, USGS-98, and USGS-99. The application identifies monitoring well NRF-7 as an up-gradient well. Upon review of ground water flow data submitted by NRF, represented by a water table contour map (Figure 9 of the application) and information pertaining to the degree of shift in the ground water flow direction, Staff recommends monitoring well NRF-7, although a relatively poor producing well, according to NRF staff, be used as a cross/up-gradient monitoring well and that it be added to the list of ground water wells for monitoring purposes under the Reuse permit (Appendix 1 of the permit) (Dixon, 2005). Staff also recommends NRF include the regional down-gradient monitoring wells USGS-97, USGS-98, and USGS-99 and the effluent system monitoring well NRF-13 (albeit with sediment problems identified by NRF staff, in its Reuse permit monitoring network (Dixon, 2005). These wells, along with wells USGS-97, USGS-98, USGS-99, are currently sampled under NRF's environmental monitoring program, and could provide a more complete characterization of ground water potentially impacted by the IWD.

Discussions with NRF have indicated that monitoring wells NRF-7 and NRF-13 are poor producers and are slated for either removal or replacement (Dixon, 2005). The Reuse program is to be notified of any approved changes to the current ground water monitoring network at NRF by the EPA and the DEQ CERCLA Program, through a request for a Reuse permit modification from Idaho Falls Regional Office. Any proposed replacement wells will need to have plan and specification approval and a permit modification issued by the Idaho Falls Regional Office prior to any construction or changes to the ground water monitoring network.

NRF provided a summary of ground water data for the past four years from both up and down gradient wells. These summary data can be found in Attachment 7 of the application (Bechtel Bettis, 2005). Ground water monitoring wells NRF-6 and NRF-13, the "Effluent System Monitoring Wells", show elevated concentrations of aluminum, calcium, chloride, chromium, iron, magnesium, manganese, nitrate, sodium, specific conductance, and sulfate in 2004. Concentrations of aluminum, chloride, and iron, at NRF-6 and NRF-13 do exceed the Idaho Ground Water Quality Rule (IDAPA 58.01.11). The concentrations of calcium, magnesium, sodium and specific conductance are elevated compared to background concentrations.

Although some of the above mentioned constituents of concern are slightly elevated in the site down-gradient wells, when compared to background concentrations; none exceed primary or secondary ground water standards of the Idaho Ground Water Quality Rule (IDAPA 58.01.11).

Based on the 2004 yearly mean concentrations (Attachment 7 in application) for ground water samples at NRF of primary and secondary constituents regulated under the Idaho Ground Water Quality Rule (IDAPA 58.01.11.200), no primary or secondary constituent standard was exceeded; however, TDS was not analyzed. The following constituents exceeded background concentrations, but were below the primary or secondary standards (some of the following constituents** do not have a standard under IDAPA 58.01.11.200): calcium, chloride, lead, magnesium, nitrate-nitrite as nitrogen, silver, sodium, specific conductance**, sulfate and zinc.

In 2004 the wells NRF-6 and NRF-13 exceeded the ground water standards found in IDAPA 58.01.11.200.01 (a) and (b). No ground water characterization or remediation plans will be required at this time due to the CERCLA ROD of "no action" for the IWD. The ROD was the result of the findings from the extensive site characterization of the area around the ditch through extensive sampling of surface water, ditch (and dredge pile) sediments, soils and perched water (Nygard, 2004).

NRF's latest 5-yr review will be due by September 2006. It should evaluate ground water trends and discuss causes of chromium in NRF-6 and NRF-13.

The decision to require a Ground Water Investigation Report (GWIR) and Water Quality Improvement Plan (WQIP) is not recommend at this time because the CERCLA program is in the process of evaluating ground water concerns at present. The DEQ Reuse program will do the following:

1. Receive an evaluation of NRF's 5-year review to see what ground water trends are developing for primary contaminants of concern (COC's).
2. Review and evaluate all ground water data collected under the new Reuse permit to further determine trends, especially among secondary COC's.
3. The next Reuse permit issued to NRF will require a GWIR and WQIP to address all COC's at that time, if impacted ground water is either trending in the wrong direction, or simply not improving.

Staff recommends that ground water monitoring include the analysis for temperature, total dissolved solids, water table elevation (amsl) and water table depth (bgs), in addition to the following parameters (obtained from Table 5 on page 21 of the application): alkalinity, aluminum, antimony, arsenic, barium, beryllium, cadmium, calcium, chloride, chromium, copper, iron, lead, magnesium, manganese, mercury, nickel, nitrate as N, nitrite as N, organic halogen (total), pH, potassium, selenium, silver, sodium, specific conductivity, sulfate, thallium, and zinc. Staff also recommends that ground water quality data for each well be submitted as raw data. The application contained "summarized' data in which ground water quality results for multiple wells have been averaged. This is not a

recommended method of reporting monitoring well data. Section H.2 of the permit requires the results of all monitoring wells and 'summarized' does not mean averaged. 'Summarization' of the results means that the monitoring data are tabulated, analyzed and explained in the report.

4.1.4 Surface Water and Flood Zones

At the INL, in the vicinity of NRF, the major surface water feature is the Big Lost River (BLR) drainage system from the north-northwestern intermountain valleys. The BLR channel lies 3 miles south of NRF and has been dry for periods of time ranging from six months to ten years. Water from the river is impounded and reserved by the Mackay Dam, four miles northwest of the town of Mackay, Idaho. The channel continues from the dam southeast through the BLR Valley, past Arco, Idaho and onto the Eastern Snake River Plain (ESRP) and the INL. When flow reaches the INL, it is diverted by the INL Diversion Dam to four spreading areas west-southwest of the Radioactive Waste Management Complex. Water not diverted by the INL Diversion Dam flows north to the terminus of the river. Rarely does flow reach the INL due to irrigation diversions and channel-bed infiltration losses. The last time BLR flow was observed reaching the INL was in June 2004. Prior to this date, the most recent date of observed flow at INL was in 1986 (Bechtel Bettis, 2005).

There has been no recorded flooding of NRF from the BLR since the establishment of the INL. Factors influencing the potential for flooding are the large distance (3 miles) between the BLR and the NRF, the topography, and rapid infiltration through the loess into the subsurface alluvium and fractured basalt.

A 25-, 50-, and 100-year floodplain analysis have not been conducted in the vicinity of NRF. Analysis has been conducted on a failure of the Mackay Dam in conjunction with 25-, 100-, and 500-year and probable maximum flood events. This study showed NRF and the IWD having 1 to 5 feet of water at an elevation above surface elevation in the event of overtopping failure of the dam caused by a maximum flood event. According to the application, maximum velocities, resulting from a maximum flood event, are not likely to cause structural damage (Bechtel Bettis, 2005).

4.2 Historic and Proposed Site Loading, Projected Environmental Impacts and Related Permit recommendations

Since 1993 NRF has, on average, experienced a decreasing trend in wastewater generation at the facility, primarily due to the deactivation of three prototype reactors. Over the past five years, NRF has experienced fluctuation in discharge volumes, varying from about 4 million gallons (MG) in 2000, 2001 and 2003 to approximately 8 MG in 2002 and 2004 (Bechtel Bettis, 2005).

A Reuse permit limit of 10 MGA has been included in the attached draft permit. This volume includes the 5 year maximum annual operational and precipitation amount of 8.8 MG, plus an additional approximate 10% for operational variability.

The proposed rate of 100 million gallons annually is significantly higher than what has been discharged historically. Discharge volumes haven't been near that amount since the last prototype was decommissioned in 1995. It is not appropriate to permit the NRF for the discharge of 100 million gallons annually only for purposes of ensuring compliance during an occurrence such as the 500-year storm event. In the event that a rare precipitation event like the 500-year storm does occur within the permit cycle, DEQ will take that into consideration when determining compliance with the permit.

Wastewater generated at NRF is primarily storm water runoff, secondary cooling water, and neutralized ion exchange regeneration solutions. The type of discharge at NRF is characterized as a rapid infiltration system. The Reuse Rules (IDAPA 58.01.17.600.06) specify that rapid infiltration systems shall not exceed a maximum 30-day average concentration of 20 mg/l for total nitrogen and 100 mg/l for total suspended solids (TSS). The total nitrogen and TSS mean concentrations of effluent for 2004 were 9.76 mg/L and 21.2 mg/L, respectively. The nitrogen concentration is down from 2003, where the mean concentration for total nitrogen was 10.15 mg/L. However, this is yearly average data and not monthly data. In order to determine compliance with IDAPA 58.01.17.600.06, Staff recommends that NRF monitor and report monthly effluent concentrations of these constituents. Yearly mean concentrations of other constituents can be found along with total nitrogen and TSS in Attachment 3 of the application (Bechtel Bettis, 2005).

Staff recommends the wastewater effluent be analyzed for alkalinity, calcium, magnesium, organic halogen (total), potassium, in addition to parameters listed in Table 3 on page 18 of the application. This recommendation is made so that water quality of effluent can be compared to the water quality of the ground water using such tools as Piper Diagrams of Stiff Diagrams.

4.2.1 Site Management

The INL is an 890 square mile restricted facility with no public access. Buffer zone requirements to private dwellings and public access areas are not applicable at this site. Grazing and runoff control are not applicable at this facility.

4.2.2 Compliance Activities

Compliance Activity CA-155-01 of Reuse Permit No. LA-000155-01 requires NRF to submit a final Operation and Maintenance (O&M) Manual for the IWD to DEQ. Staff recommends the manual be submitted to DEQ within eight (8) months of permit issuance.

Compliance Activity CA-155-02 of Reuse Permit No. LA-000155-01 requires NRF to provide DEQ with a Contingency Plan for handling inadvertent releases of radiological material or hazardous materials. Staff recommends this plan be submitted to DEQ at the same time as the 2006 Annual Report.

Compliance Activity CA-155-03 of Reuse Permit No. LA-000155-01 requires NRF to provide DEQ with a Solid Waste Management Plan. The plan shall provide information on the following: how the decision to remove solids is determined, where the dredge piles are located, what are the required slopes of the piles, how tall are the lifts, and what kind of seed mixture will be used. Staff recommends this plan be submitted to DEQ at the same time as the 2006 Annual Report.

5.0 Conclusions

Staff recommends that the attached Reuse permit be issued. The permit specifies loading limits for total nitrogen and total suspended solids, and establishes monitoring requirements to adequately protect public health and the ground water quality. Monitoring and reporting requirements to evaluate system performance and to determine permit compliance have been specified.

6.0 References

Bechtel Bettis Inc., 2005, *Reuse Permit Application for the Naval Reactors Facility*.

Bechtel Bettis Inc., 2004, *The NRF Environmental Monitoring Program, NRF2455,* Naval Reactors Facility, Idaho Falls.

Bechtel Bettis Inc., 2003, *Navel Reactors Facility Environmental Monitoring Report (NRFEA-1246), Calendar Year 2003*.

Bechtel Bettis Inc., 2002, *Navel Reactors Facility Environmental Monitoring Report (NRFEA-1129), Calendar Year 2002*.

Department of Energy (DOE), 1994, *Proposed Plan for the Naval Reactors Facility, Industrial Waste Ditch (Operable Unit 8-07, and Landfill Areas (Operable Units 8-05 and 8-06), Idaho National Engineering Laboratory.*

Dixon, Wendy, 2005, Personal Communication, NRF, Regulatory Affairs, Idaho Falls, Idaho.

Idaho Administrative Procedures Act (IDAPA), IDAPA 58.01.11.200.01(a) and (b), "Ground Water Quality Rule".

Idaho Administrative Procedures Act (IDAPA), IDAPA 58.01.16, "Wastewater Rules".

Idaho Administrative Procedures Act (IDAPA), IDAPA 58.01.17, "Rules for the Reclamation and Reuse of Municipal and Industrial Wastewater".

Nygard, D., L. Neilson and W. Poole, 1994, Memorandum from Dean Nygard, Lance Neilson, Walt Poole to Joe Nagel, "Staff Recommendation to Sign the Record of Decision (ROD) for the Industrial Waste Ditch (OU 8-7) and Landfill Areas (OU 8-5/6) for the Naval Reactors Facility (NRF) at the Idaho National Engineering Laboratory (INEL) under the Federal Facility Agreement/Consent Order (FFA/CO)." September 19, 1994.

Westinghouse Electric Corporation (WEC), 1994, *Final Remedial Investigation/Feasibility Study for the Exterior Industrial Waste Ditch, Operable Unit 8-07, Volumes 1 and 2.*